Geometry Honors Problem sets

Transformations

**Problem Set: 7.1**

1. Find the general rule for reflecting over the line  . ( )

*For each transformation in 2-4:*

1. *Plot the three points A(0,4), B(4,6), and C(2,0) and their images A´,B´, and C´ under the transformation.*
2. *State whether the transformation appears to be an isometry.*

2. 

3. 

4. 

5. Use the results of 2-4 to make a conjecture about what may or may not make an isometry.

*Find the line of reflection for each pre-image and image in 6-7. You may leave you answer in point-slope form or slope-intercept form.*

6. A(1,4), A*´*(-3,4)

7. A(-1,2), A*´*(4,5)

**Problem Set: 7.2**

1. Consider the mapping 

a) Plot the points P(4,5), Q(-3,2) and R(-3,-1) and their images.

b) Does the mapping appear to be an isometry? Why or why not?

2. If T, then T.

3. Draw the x- and y-axes and the vertical line  with equation . Find the images of  of the

following points.

a) (4,3) b) (0,-2) c) (-3,1) d) (x,y)

4. What is the pre-image of the point (-2,5) if it is the result of a reflection over the line ? ?

5. Find the equation of the image of the line after the given reflections (find two points on the image and

use them to write the equation)

a) 

b) 

**Problem Set: 7.3**

1. M maps point P to P’, and N maps P’ to P”. Find T, the translation that maps P to P”.







2. State another equivalent rotation for each given rotation.

a)  b) 

3. The diagonals of regular hexagon ABCDEF for six equilateral triangles. The letter in the subscript

represents the point about which you rotate, and the number is the degrees of rotation. A negative

indicates clockwise rotation. indicates a half-turn. Your answer will be another point in the

 diagram.

a) ? b) ?

c) ? d) 

d) If  is the bisector of , then ?

4. State whether the specified triangle is mapped to the other triangle by a reflection, translation, rotation

or half-turn.

 a) 1 to 2 b) 1 to 3

c) 1 to 4 d) 1 to 5

e) 2 to 4 f) 2 to 7

g) 4 to 6 h) 4 to 8